

In the Claims:

1. (Currently amended) An apparatus for the hydrolysis of protein-containing raw material, the apparatus comprising:

a hydrolysis area that provides hydrolysis of said raw material by reacting a reaction mixture comprising said raw material and at least one enzyme present in said area, wherein the reaction mixture contains both solids and liquid, and wherein upon hydrolysis, said reaction mixture further comprises hydrolysis product;

an inactivation area that receives reaction mixture from the hydrolysis area and substantially inactivates said at least one enzyme present in the reaction mixture; and

a separation area separately located from the inactivation area that receives at least a portion of the reaction mixture from the inactivation area and is capable of separating it into two or more components, including at least one substantially liquid component which comprises water-soluble protein and including at least one substantially solid containing component;

wherein the hydrolysis area, inactivation area, and separation area operate in a continuous non-batch mode for ~~a period of time~~ at least three days without interruption and maintain an even and continuous flow of said reaction mixture; and

wherein any emulsion present in said liquid component is present in an amount at or below 10% of the reaction mixture.

2-3. (Canceled)

4. (Previously Presented) The apparatus of claim 1, wherein the level of emulsion present is at or below about 5%.

5. (Previously Presented) The apparatus of claim 1, wherein the level of emulsion present is at or below about 2%.

6. (Previously Presented) The apparatus of claim 1, wherein the level of emulsion present is at or below about 1%.

7. (Previously Presented) The apparatus of claim 1, wherein the level of emulsion present is at or below about 0.5%.
8. (Previously Presented) The apparatus of claim 1, wherein the separation area comprises a slanted filter screen.
9. (Previously Presented) The apparatus of claim 1, further comprising a centrifuge that receives at least a portion of the liquid component, and which separates the portion into at least a first fraction comprising water-soluble protein and at least a second fraction comprising water-insoluble protein.
10. (Previously Presented) The apparatus of claim 1, further comprising at least one pump capable of pumping oil present in the reaction mixture away from the reaction mixture, or comprises a decanter for decanting oil present in the reaction mixture, or comprises both.
- 11-12. (Canceled)
13. (Previously Presented) The apparatus of claim 1, wherein the hydrolysis area comprises at least one feeder screw for conveying the reaction mixture through the hydrolysis area.
14. (Previously Presented) The apparatus of claim 1, wherein the hydrolysis area comprises a tube-shaped reactor.
15. (Previously Presented) The apparatus of claim 1, wherein the inactivation area comprises at least one feeder screw for conveying the reaction mixture through the inactivation area.
16. (Previously Presented) The apparatus of claim 13, wherein at least one feeder screw rotates clockwise for a first period of time, and counter-clockwise for a second period of time.
17. (Cancelled)

18. (Previously Presented) The apparatus of claim 1, wherein the inactivation reactor comprises an outlet for discharging at least a portion of the reaction mixture and an agitator adjacent to the outlet that suspends solid matter in the reaction mixture near the outlet.

19. (Previously Presented) The apparatus of claim 18, wherein the agitator comprises a screw that rotates in a forward and a reverse direction.

20. (Currently Amended) The apparatus of claim 1, wherein a pump pumps the reaction mixture out of the inactivation area and toward the separation area, such that emulsification of liquid in the reaction mixture is maintained at or below ~~a predetermined level~~ 10 % of the reaction mixture.

21. (Previously Presented) The apparatus of claim 1, further comprising a collection area wherein pieces of protein-containing raw material are collected, and wherein said pieces of protein-containing raw material are provided to the hydrolysis area from said collection area.

22. (Original) The apparatus of claim 21, wherein the collection area includes processing equipment that reduces the size of the pieces of raw material collected.

23. (Previously Presented) The apparatus of claim 1, wherein the apparatus is capable of hydrolyzing the raw material at a rate of two tons per hour.

24. (Previously Presented) The apparatus of claim 1, wherein the apparatus is capable of continuous hydrolysis for at least seventy-two hours.

25. (Canceled)

26. (Previously Presented) The apparatus of claim 1, wherein the apparatus is capable of producing a yield of water-soluble protein from the liquid in the reaction mixture of at least about 50 percent by weight of the weight of protein contained in the raw material.

27. (Previously Presented) The apparatus of claim 1, wherein the apparatus is capable of producing a yield of water-soluble protein from the liquid in the reaction mixture of at least about 60 percent by weight of the weight of protein contained in the raw material.

28. (Previously Presented) The apparatus of claim 1, wherein the apparatus is capable of producing a yield of water-soluble protein from the liquid in the reaction mixture of at least about 70 percent by weight of the weight of protein contained in the raw material.

29. (Previously Presented) The apparatus of claim 1, wherein the apparatus is capable of producing a yield of water-soluble protein from the liquid in the reaction mixture of about 70 percent by weight of the weight of protein contained in the raw material.

30. (Cancelled)

31. (Cancelled)

32-33. (Canceled)

34-57. (Cancelled)

58-59. (Withdrawn)

60- 65. (Cancelled)

66-73. (Withdrawn)

74. (Currently amended) An apparatus for the hydrolysis of protein-containing raw material, said raw material in a hydrolyzing area also containing solid matter, the apparatus comprising:

means for hydrolyzing said raw material by reacting a reaction mixture comprising said raw material and at least one enzyme present in said area, wherein the reaction mixture contains both solids and liquid, and wherein upon hydrolysis, said reaction mixture further comprises hydrolysis product;

means for substantially inactivating said at least one enzyme present in the reaction mixture in an inactivating area; and means for separating in a separating area, separately located from the inactivation area, at least a portion of the reaction mixture into two or more components, including at least one substantially liquid component which comprises water-soluble protein and including at least one substantially solid containing component;

wherein the hydrolysis area, inactivation area, and separation area operate in a continuous non-batch mode for ~~a period of time~~ at least three days without interruption, minimize the formation of emulsion, and maintain an even and continuous flow of said reaction mixture; and

wherein said apparatus maintains any emulsion present in the liquid in the reaction mixture below 10% of the reaction mixture.

75-93. (Canceled)